

CACTUS AND SUCCULENT JOURNAL

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FIG. 82. *Echinocereus Salm-Dyckianus*
in the garden of R. W. Kelly.



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ANNUAL MEETING

Sunday, Oct. 4th, 1942, Corona, Calif.

The Annual Meeting of the Society was held at the home of Past-President Howard E. Gates. Forty being present, with a quorum of at least 15 members, the Meeting was called to order, at the completion of luncheon, by President Ervin Strong at 2:30 P. M. Secretary Clarence L. Clum reported the Meeting.

Corresponding Secretary, Mrs. Maybelle Place, read the application of the Henry Shaw Cactus Society, St. Louis, Mo., and stated that their Constitution and By-Laws were in order. R. W. Kelly moved, Carl F. Brassfield seconded their acceptance. Passed unanimously.

Secretary Clum read the report of Scott Haselton, Chairman of the Nom. Com. Clum moved, Rush seconded the report be accepted. Passed unanimously.

Clum moved, everybody seconded, a big hand and vote of thanks for the kind hospitality of our hosts, Mr. and Mrs. Howard Gates. Business Meeting adjourned at 3:10 P. M. to hear the dedication of the Gates Lower California Botanical Gardens.

At the dedication of the Gates Baja California Botanical Garden, W. Taylor Marshall made the dedicatory address which is here reported in part:

"Mr. President, Mr. Gates, members of the Cactus and Succulent Society and friends. It is most seemly in this period of conflict, when the United States of America and our sister Republic of Mexico are closely united in a struggle to preserve our freedoms, that we should gather at this spot to dedicate a garden designed to give our people a greater understanding of the desert flora of the two Districts of Baja California.

"That this planting has been made at all is due first to the courtesy of the Mexican Government who, through the intercession of their consul at San Diego, Senor Enrico Ferrera, permitted Mr. Gates to make ten expeditions into that beautiful country to study and bring back with him specimens of the indigenous plants for the information of botanists here.

"When Gates made his first trip into Baja California, roads beyond Mulege were practically non-existent and the trip would have been impossible except for the unfailing courtesy and helpfulness of the inhabitants of that sparsely populated district, as we have learned through the pages of the Cactus Journal where Gates' reports of his kindly reception from natives and officials, could but have the effect of cementing the good

feelings between the peoples of our two nations.

"In a booklet called 'The Personal Tale of a Cactus Collector',* published in 1930, he has noted this spirit of helpfulness and given us a human document of great interest which should be read by cactophiles and by any American who desires to know the Mexican people.

"In accenting the assistance of officials and the people of Baja California I do not intend to mitigate the indomitable perservance of Gates himself, who made the ten trips under conditions that would have daunted many of us and brought to his work an intelligent observance which is indicated by the concise and thorough records of the flora. Many errors in published descriptions of plants have been corrected and numerous plants not heretofore known to science have been carefully described and pictured by him.

"Specimens collected on these expeditions have been sent to botanical gardens in Europe and Asia as well as in our own United States.

"It is also most seemly that I should have the great pleasure of making this dedication because I accompanied Mr. Gates on one of his expeditions and shared with him the attendant hardships and with him rejoiced at the additions to our knowledge of Baja California plants that resulted from the trip.

"It is undeniable that a botanical garden devoted to the flora of a limited district and containing a high percentage of the plants of the district and supervised by a man who knows the country and the plants and who can also make them grow and prosper as these plants do, has a definite place that can never be supplanted by the larger, general botanical gardens.

"May this unique garden, affiliated with the American Association of Botanical Gardens, grow and prosper and I hereby dedicate it to the service of botanists throughout the world that through it our knowledge may be increased."

Mr. Gates pointed out to the assemblage that he is growing both collected plants and seedlings and not only one but many plants of each species and variety. Favorable comments were made and compliments paid to Mr. Gates for his untiring efforts and devotion to succulent plants which resulted in his establishing the Gates' Baja California Botanical Garden.

ERVIN STRONG, President.

*Published by H. E. Gates, Box 247, Corona, Calif. Price 25 cents.

IMPORTANT NOTICE: The Journal will continue through "duration" and on and on. To save double mailing, we are sending the October and November issues under one cover.



FIG. 83. Type specimen, *Ferocactus alamosanus* Br. & R. var. *platygonus* var. nov. showing obtuse ribs, naked appearance of plant, and heavier, shorter spines.

A New Variety of *Ferocactus alamosanus*

By GEORGE LINDSAY

Photos by Author

Ferocactus alamosanus Britton and Rose var. *platygonus* var. nov.

Caulis simplex, globosus aut breviter cylindricus, ad 1 meter altitudine; costae fere 13, obtusae; spinae laterales fere 8, ad 45 mm. longae, compressulae; spina media una, ad 75 mm. longa, colore electri; flores infundibuliformes, viridiflavi, ad 45 mm. longi et 35 mm. lati; floris partes interiores multi, spathaeformes, margine serrato; stamina ad 15 mm. longa; pomae ovatae, ad 4 cm. longae; floribus permanentibus, aperiens foraminibus inferioribus, flavae, squamas latas ferentes; semina fusca aut atra, ad 3 mm. longa, impara.

Plant simple, up to 1 meter tall and 4 dm. in diameter, usually much smaller, globular to short cylindric; ribs about 13 in most specimens, sometimes more in very large plants, 3 or 4 cm.

broad and deep, obtuse, becoming more so in age; spines amber yellow with reddish base, gray in age, radials usually 8, 25 to 45 mm. long, slightly flattened laterally, central spine 1, to 75 mm. in length, porrect, slightly incurved; *Flowers* funnelform, to 45 mm. long and 35 mm. broad; outer perianth segments about 20, 10 mm. long and 6 mm. broad, spathulate, light greenish yellow in color, margin ciliate; inner perianth segments many, to 30 mm. long, light greenish yellow, spathulate, margin serrate; stamens to 15 mm. long, filaments yellow, anthers about 1 mm. long, yellow; style yellow, stigma lobes 12, 12 mm. long; *Fruit* ovoid, perianth persisting, opening by basal pore, to 4 cm. long and 3 cm. broad, yellow, bearing broad scales;



FIG. 84. Typical *Ferocactus alamosanus* Br. & R., collected at Black Canyon, Guirocoba Ranch, Sonora. Compare the more dense armament with the type of var. *platygonus* collected in the same locality.

Seeds deep brown or black, irregular, smooth, to 3 mm. long and 2 mm. broad, hilum at base of tiny terminal tubercle.

Type locality: Guirocoba Ranch, 30 miles east of Alamos, Sonora, Mexico, altitude about 4,000 feet.

Distribution: In the mountains east of Alamos, Sonora, in the western slopes of the Sierra Tarahumare of southwestern Chihuahua, and the northwestern corner of Sinaloa.

Type specimen deposited in the Dudley Herbarium of Stanford University, number 283,190.

In the Spring of 1910 botanists Rose, Standley and Russell made a trip down the west coast of Mexico, stopped off at the old city of Alamos, Sonora, and botanized nearby Alamos mountain. Their harvest was rich in new things, as that area had never before been well worked by competent botanists, and the slopes of the mountain were covered with representatives of the tropical flora to the south, as well as the more xerophytic types from the deserts to the north. As a result, the type locality for many Mexican west coast species will be found listed as Alamos, Sonora.

One of the cacti which they collected and subsequently described deserves our attention here.

It is *Ferocactus alamosanus*. Recently, intensive collecting has been done in the Alamos area, and two apparently different types of *Ferocacti* have been brought out under the above name. One of these was a small, many ribbed plant bearing numerous, slightly angled spines, while the other was a more robust, less heavily armed plant with fewer ribs.

The original description of *Ferocactus* (*Echinocactus*) *alamosanus*¹ was rather meager, the flower and fruit being unknown. A small plant of the type collection, however, was grown in Washington for several years, then sent to Mr. Wm. Hertrich of the Huntington Estate, where it was planted in the open to develop. Mr. Hertrich kindly showed me the plant (Huntington Botanical Garden No. 43-194) recently, and without question it is of the small, many ribbed type. This same plant was photographed to illustrate the original description in 1913, and was again photographed about 1920 to illustrate the species in the *Cactaceae*². Mr. Hertrich allowed me to photograph the same plant, which

¹*Echinocactus alamosanus* Britton and Rose, Contr. U. S. Nat. Herb. 16:239. 1913.

²Britton and Rose, *Cactaceae*, Vol. 3, pg. 137. 1922.

photo is herewith reproduced. It is interesting to note that this plant is now only about 15 cm. in diameter, having grown no more than 5 cm. in the last twenty years, as Britton and Rose³ note that it was only 10 cm. in diameter. Truly a slow growing type!

³Ibid.

I feel confident that the larger, fewer ribbed plant found near Guirocoba deserves varietal distinction, and I am giving it the varietal name of *platygonus* referring to the obtuse angles of ribs, which are in marked contrast to the acute angles of the type for *Ferocactus alamosanus*.

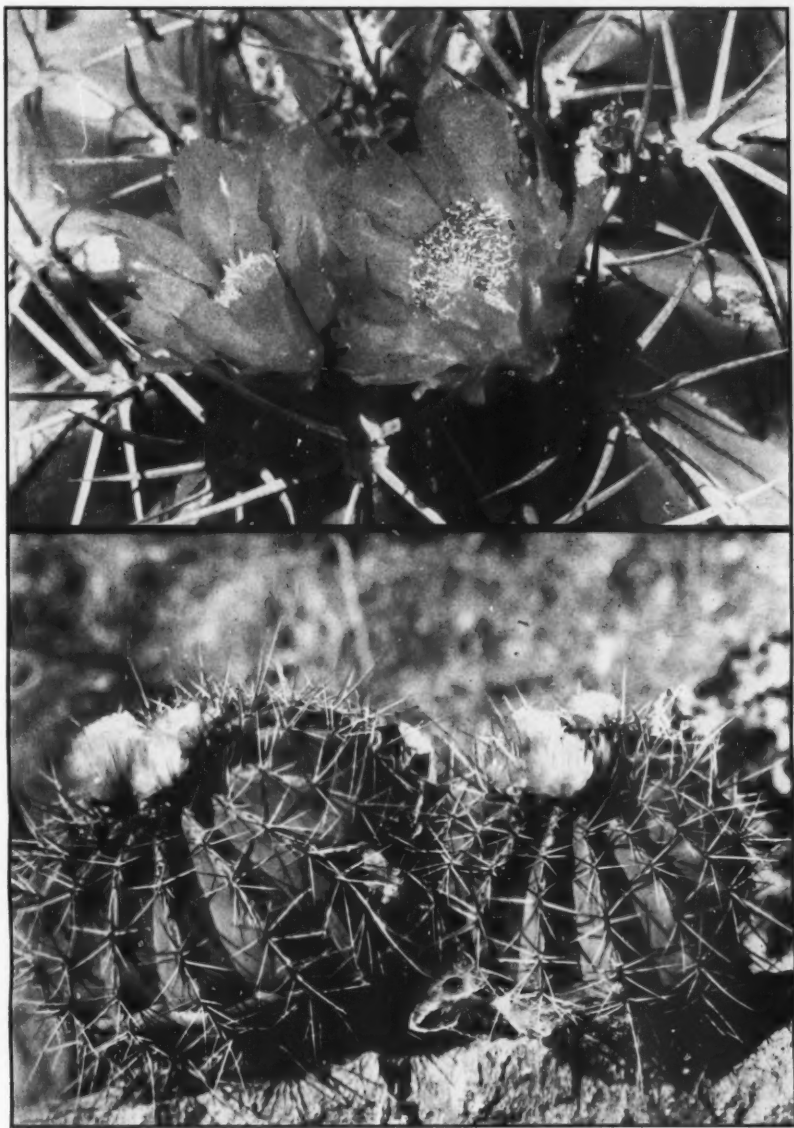


FIG. 85, 86. *Ferocactus alamosanus* var. *platygonus* in flower at Guiropaco, Chihuahua, March 29, 1939.

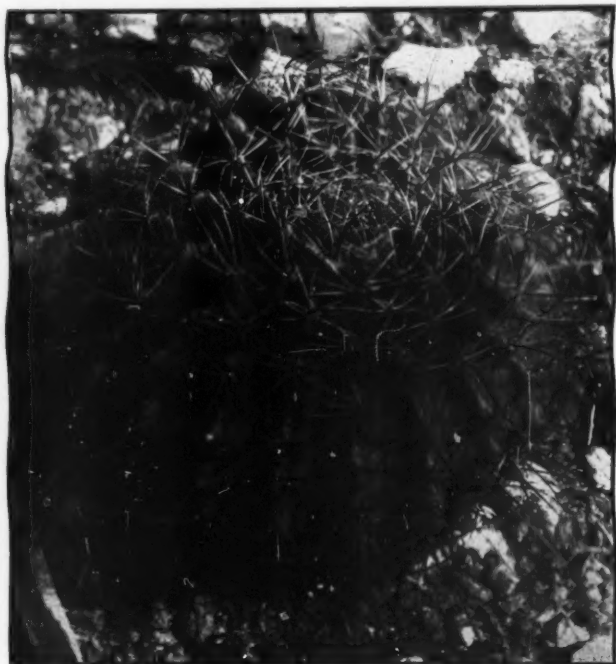


FIG. 87. *Ferocactus alamosanus* Br. & R., growing in the Huntington Botanical Gardens (Huntington No. 43-194). In the last 20 years this plant has increased less than 2 inches in diameter.

Other differences are: variety *platygonus* has but 11 to 14 broad, flattened ribs, and often attains a height of three feet, while the regular form of *F. alamosanus* has about 20 shallower, much more acute ribs, and seldom is over ten inches tall. The spine count of the two types is about the same, but the spines of var. *platygonus* are rounder, stouter, and shorter, while those of the true *alamosanus* are more angular, acicular, longer, and the whole armament is heavier, as the spines are more intermeshed because of the numerous ribs.

I have never collected this species on Alamos mountain, but have found both types near Guiracoba, var. *platygonus* being common at lower elevations while the regular type of *alamosanus* is to be found only at higher elevations, at a place called the Cienegita and in upper Black Canyon.

Unfortunately I have no record of the flower of the regular form of *Ferocactus alamosanus* to compare with the flower of *F. alamosanus* var. *platygonus*. The photo and flower description of the latter was made of a plant blooming at Guiropaco, Chihuahua, March 29, 1939. We

found plants which probably were *F. alamosanus* var. *platygonus* growing at higher elevations among the pines above Cerro Colorado and Metate, Chihuahua. Here the plants were nearly always found growing in scant soil on the very

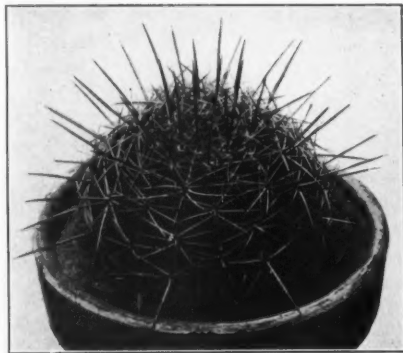


FIG. 88. *Ferocactus alamosanus* as pictured in *The Cactaceae* 3; 137, 1922. This figure (145) is from a photograph of the living plant collected by Dr. Rose. This is the same plant which is now Huntington No. 43-194.



FIG. 89. *Ferocactus alamosanus* var. *platygonus* at Guirocoba. (Also see photo JOURNAL 10; 150, 1939).

tops of large boulders, often with *Echinocereus Scheeri*, possibly to help escape the heavy winter snows.

I believe that all of the seedlings of *Ferocactus alamosanus* in the trade at the present time are of the variety *platygonus*, as the source of supply for the seed has been Guirocoba, and that type is more common there.

Specimens of both types of this species have been deposited in the Dudley Herbarium of Stanford University. Four specimens representing both types are growing in the Huntington Botanical Gardens, and both are also to be found growing in the Mexican beds at the Desert Botanical Gardens of Arizona. The growth of the variety *platygonus* has been phenomenal at the latter institution, most of their specimens having more than doubled their size since the summer of 1940.

Johnston⁴ reports having found *Ferocactus alamosanus* near the Gulf of California at San

Carlos Bay. Dr. Craig and I visited the locality in April, 1939, and found the plants to be the straight spined form of *Ferocactus Covillei* Br. & R. common in that region⁵. Britton and Rose in their "Cactaceae" mention Johnston's collection.

I wish to express my appreciation to Mr. William Hertrich of Huntington Botanical Garden in making their material available for study, also to Mr. R. S. Woods for the Latin diagnosis of the plant description.

Collections of *Ferocactus alamosanus* and *Ferocactus alamosanus* var. *platygonus* were made under special permit granted George Lindsay by the Departamento Forestal y de Caza y Pesca, Servicio de Pastos Hierbales y Arbustos Silvestres, number 224-9309, signed March 6, 1939, by Rodolfo Sada Paz.

⁴Johnston, Ivan Murray, Proceedings Calif. Acad. of Sciences XII, No. 30, p. 1110.

⁵Cactus and Succulent Journal X, No. 9, pgs. 149-150.

Notes on Haworthias

By J. R. BROWN

Haworthia viscosa (L.) Haw. var. *torquata* (Haw.) Bak. in Journ. Linn. Soc. XVIII (1880) 201; Berger in Pflanzenr. IV. 38. (1908) 79; Poelln. in Repert. Sp. Nov. XLI (1937) 215. *Haworthia torquata* Haw. in Phil. Mag. (1827) 123. *Aloe torquata* Salm-Dyck, Monogr. (1836-49) sect. 3, fig. 6.

Plant with erect stems, 15-25 cm. in height and proliferous from the base. Leaves crowded, in 3 spiral rows, ovate-lanceolate, long acuminate, erect-spreading, 3-5 cm. long, 12-17 mm. wide, bright green, back sharply and somewhat obliquely keeled, the cartilaginous margins and keel scarcely crenulate.

Locality: Type locality unknown. Recorded from Prince Albert.

Introduced to England by Bowie early in the 19th century.

This var. of *Haw. viscosa* seems to be more freely growing than most of the other vars. It is

a rather attractive plant with its pleasing bright green color and very spiral stems. The plant of this *Haworthia* which is shown in the photo came from Prince Albert, the stems are 6-7 cm. in diam., the leaves are 3-4 cm. long, and 12-17 mm. wide.



FIG. 90. *Haworthia viscosa* (L.) Haw. var. *torquata* (Haw.) Bak. nat. size.

Haageocereus Backeberg (Syn.: *Binghamia* Britton and Rose p. p.)

By DR. LEON CROIZAT

In a previous article in the pages of this JOURNAL, I have shown that the name *Binghamia* used by Britton & Rose for a cactus (Cact. 2:167. 1920) cannot be maintained on account of the earlier publication of *Binghamia*, a seaweed. In these notes I will attempt to reestablish the nomenclature of Britton & Rose's genus under *Haageocereus*, which must replace *Binghamia*. I follow Bullock and Werdermann in accepting *Haageocereus* (*Binghamia*) as a group which is taxonomically distinct from *Borzicactus* and *Cereus*. I have seen little material of *Haageocereus*, only sterile young plants and the specimens of Britton & Rose preserved in the herbarium of the N. Y. Botanical Garden, but believe that the botanists just named are correct in accepting *Haageocereus* as a good genus. My present belief may be altered, of course, by a full critical study of this group. For the present, it is urgent to establish the status of names which have been used at cross-purposes for over ten years in the classification of these cacti.

The Index Kewensis and the Gray Index do not agree as to the place and time of publication of *Haageocereus*. The Index Kewensis lists the following references: "Cact. & Succ. Jour. Amer. iii. 130 (1932), in obs.; et in Cactus Journ. i. 52 (1933), in obs.; Backeb. Blätter Kakteenforsch. 1934 Pt. 3 [p. 4], Pt. 6, [p. 1], in obs.", while the Gray Index gives: "Desert, 5: 3. 1933", with the note: "Without Latin diagnosis." Both the Index Kewensis and the Gray Index mention *Haageocactus* Backb., in addition, the former referring it to: "Möllers Deutsch. Gärtner-Zeit. 1931, xlvii, 187 in obs.", the latter to: "Desert, 5: 3. 1933" and adding "Probably by error for *Haageocereus*."

To straighten up these confused references once and for all, I will give here the original texts in full, with brief comments:

(a)—Möllers *Deutsche Gärtner-Zeitung* 46: 187. June 1931.

"Dicht bestachelte Cereen von unvergleichlich schönen Farben, bunt abgestuft wie ein *pectinatus*, das sind die Vertreter der neuen Gattung: *Haageocactus*. Goldgelbe strausiigleiche Formen findet man unter den *Binghamias*, zuweilen gehen sie in *Zartrosagelb* über."

This statement occurs in Backeberg's account

of an expedition to Peru undertaken in 1930-1931. The name *Haageocactus* is not validly published, being either incidentally mentioned (Art. 37 *ter* Amsterdam Code), or not sufficiently characterized for valid publication (Art. 42).

(b)—*Cactus and Succulent Journal of the Cactus and Succulent Society of America* 3: 130. February, 1932.

"The area of transition between desert and arable land yields a number of novelties such as the following: *Haageocereus rigidissimus* and *auricolor*, gen. n. et sp. n. These are up to 1.20 meters (four feet) high, densely spiny, highly colored cerei of exceptional beauty which have neither the hair of *Binghamia* nor the flower forms of *Borzicactus*, and so form a separate sub-genus of *Cereus*."

This does not constitute valid publication under Art. 42. *Haageocereus*, in addition, is spoken of as a genus and as a subgenus of *Cereus*.

(c)—*Desert Plant Life* 5: 3-4. May, 1933.

"The idea which I have entertained for a long time is that the forms which range from Ecuador to middle Peru and which were assigned to the genus *Binghamia* Rose, do not actually belong in this genus. Because of their wheel-shaped flowers and the absence of what was considered to be a bristly cephalium but is really only an areole, I would place them in a new genus, *Haageocereus*. Furthermore, Peru undoubtedly harbors at least three different species of *Melocactus* and these, together with the species of *Haageocactus*, are found in the low coastal cordilleras of the west coast." In the next page (p. 4) Backeberg adds: "... what I have now found must be the new *Borzicactus faustianus*. ... The color of the flowers is a light cinnabar-red. A gorgeous sight indeed, because its flowers, which open during the daytime, show a similarity to those of *Haageocereus*, which are usually half-closed and open fully only towards evening." Two photographs accompany the texts quoted and show, one "*C. (Haageocereus) acanthus*," the other "*The white cacti Cereus (Pseudoespostoa Bkbg.) melanostele*. In the foreground *Haageocereus acanthus*. In the background *C. Matucanensis* n. sp."

It is exceedingly doubtful whether this account constitutes valid publication, and it is my opinion that it does not. The publication of a genus is not validated by mention of the included species (Art. 41), and the contemporaneous use of "[*Cereus*]. (*Haageocereus*) *acanthus*" and "*Haageocereus acanthus*" creates a *nomen provisorium* (Art. 37 ter), the captions leaving it unsettled whether *Haageocereus* is provisionally published as a genus, a subgenus or a section. The text does mention *Haageocereus* as a genus, but the statement "... the absence of what was considered to be a bristly cephalium but is really only an areole" is meaningless. This leaves as a generic character the "wheel-shaped flowers", which is certainly insufficient. It is probable that Backeberg was wont to use *Haageocereus* and *Haageocactus* indiscriminately from 1931 to 1933, referring under these two names to the same plant. The fact that no Latin diagnosis appears with the text quoted is irrelevant because a Latin diagnosis is required for a valid publication only after January 1st, 1935 (Art. 38).

(d)—*The Cactus Journal*, Great Britain, 1: 52-54. June, 1933.

This article evidently duplicates the one just quoted and seems to be written to advertise Backeberg's findings to lovers of succulents in Great Britain. It is in the form of a letter from Lima, dated "Central Peru, March, 1933." One of the illustrations shows: "*Pseudoespostoa melanostele*", the other: "*Haageocereus acanthus*", both from snapshots. The text which interests our subject runs as follows: (p. 52) "... the *Binghamias* described by Dr. Rose are nothing of the kind, but have spread from Ecuador to Central Peru; (on account of their rotate flowers which do not arise from areoles furnished with a true cephalium, I have designated them *Haageocereus* g.n. or subg. n.). Further, that Peru harbours at least three different species of *Melo-cactus* and these together with *Haageocereus*, inhabit the low Cordilleras of the western coast." Page 53, Backeberg mentions *Cereus* (*Borzicactus*) *Faustianus*, comparing its flowers with those of *Haageocereus*, of which he remarks (p. 54) that they keep half-closed during the day to reopen towards evening.

Haageocereus is here used as a genus and, alternatively, as a subgenus, but no further mention is made of *Haageocactus*. The plant identified as *Borzicactus faustianus* in the pages of the "Desert Plant Life" is here referred to as *Cereus* (*Borzicactus*) *Faustianus*. It is obvious that Backeberg, untrained as a taxonomist, takes up or drops out new names merely to suit immediate

epistolary needs, remembering and forgetting his "new" species and genera at random. It is clear, in addition, that Backeberg is not acquainted with the Rules, for he believes that a name may be rejected, if its authors can be shown to have failed to understand the limits of a given group the same as Backeberg does. As referred to in this text, *Haageocereus* may not be said to have a better status than that of a *nomen subnudum*.

(e)—*Blätter für Kakteenforschung* (Bulletin of Cactus Research) 1934, Pt. 3.

The text is not paged, but *Haageocereus* is listed on the fourth page of Part 3 in a Systematic Synopsis of the Cactaceae, as follows: "Tribus III: Cereae Berger A) Sectio Australis. Sippe 6: *Trichocerei* Berger Cereoidei: Genus 52: *Haageocereus* Backbg. (*C. pseudomelanostele* W. & B.).

This entry does not constitute valid publication for reasons that are self-evident.

(f)—*Blätter für Kakteenforschung* (Bulletin of Cactus Research) 1934, Pt. 6.

The text, as usual with the *Blätter*, is not paged, but *Haageocereus* is referred to as a new genus and described on the first page of Part 6. This part in the copy of the *Blätter* available at the Gray Herbarium of Harvard University is dated by a stamp: July 9, 1934, which indicates that the actual publication took place almost certainly in June, 1934. The description of *Haageocereus* is given, as it is usual with the *Blätter* in German, English, Dutch and French. The English text, translating the German, reads: "A night flowering genus from the dry Pacific regions of Peru. The flowers which close in the morning or by noon, have a slender tube with small scales and weak hairs and open flat. The inner involucre leaves are greenish white, creamy or pink. The fruit is round, the size of a hen's egg, smooth, with a few hairs on the small scales, green or pink and topped with the remains of the flower. Seeds black, rather dull. Dr. Rose found the species that was first known near Lima: *Haageocereus pseudomelanostele*, which may be identical with the old *C. limensis* (Rose called this species '*Binghamia melanostele*', a double error. The *Cereus melanostele* of Vaupel is the white woolly *Pseudoespostoa* from Chosica near Lima. When drawing up the description of the genus *Binghamia* Rose proposed *Cereus aurivillus*, for he did not find it in Peru and possibly thought it identical with *Haageoc. pseudomelanostele*. Rose gives as characteristic of this genus 'develops in the flowering region a bristly cephalium-like head', and this only applies to *Cereus aurivillus* and *Cereus plagiotoma* (which is usually errone-

ously called *Borzicactus*). Since this generic character holds good and is found in both the latter *Cerei*, these are true *Binghamias* in Rose's sense. The genus is very resistant to damp, although it grows in desert surroundings, which suggests that formerly the climatic conditions of this region were different. The species is amongst the most beautiful of the *Cerei*."

The English section of the *Blätter* leaves something to be desired, as a rule, and in the present case the text is in part obscure. The German and the French versions, however, elucidate Backeberg's thought, showing that he rejects *Binghamia* in the sense of Britton & Rose because the genus is characterized—according to him—by notes taken from *C. aurivillus* rather than from *C. pseudomelanostele*. Backeberg's remark that Rose characterizes the genus as developing in the flowering region "a bristly cephalium-like head" is not wholly correct. The text which Backeberg would seem to have in mind is the observation of Britton & Rose under *B. melanostele* (Cact. 2: 168. 1920) to the effect that: "The top of the flowering plant is made up of a compact mass of long white or yellowish bristle-like spines from one side of which the flowers appear, and this F. Vaupel has termed a lateral cephalium."

The quoted literature conclusively shows that *Haageocereus* was validly published by Backeberg in the *Blätter für Kakteenforschung*, Part 6 [p. 1] in June, 1934, that is, when a publication could still be effected without benefit of a Latin diagnosis. The characterization of the genus is barely sufficient, but is adequate, nevertheless. The type-species is *H. pseudomelanostele* (Werd. & Backbg.) Backbg., which is effectively published together with the genus. In publishing *Haageocereus*, Backeberg did not mean, as it has currently been believed, to "re-name" Britton & Rose's *Binghamia*, but to segregate out of it, under a new generic name, species that did not agree in essential characters with Backeberg's concept of *Binghamia*.

I may mention here that Werdermann (in *Kakteenk.*, 50. 1937) agrees with Backeberg in this, that Britton and Rose misunderstand *Binghamia melanostele*, the very species which they propose as the type of the genus. According to Werdermann, Britton and Rose treat as *B. melanostele* two entities, namely, *Cephalocereus melanostele* Vaupel, and a new species, later published by Backeberg & Werdermann as *Cereus pseudomelanostele*. Werdermann also remarks that *C. melanostele* has a lateral pseudocephalium, while *Binghamia* is keyed by Britton & Rose among the *Cerei* with-

out cephalium. It seems well established that Britton & Rose, indeed, had a confused concept of the limits of *Binghamia*, especially of its type-species, and it is lamentable that the authors who so often have spoken of "cephalia", "pseudocephalia" and the like should never have attempted to define precisely what they meant. Backeberg, a keen observer of live plants, noticed the inaccuracies that had crept in the descriptions of Britton & Rose, and concluded that their concept of *Binghamia* could not be maintained, believing (in *Cact. Jour.* 1: 52. 1933) that the species of *Binghamia* with rotate flowers not arising from areoles furnished with a true cephalium should form a new genus, *Haageocereus*. Werdermann comments on his part (op. cit., loc. cit.) that inasmuch as *B. melanostele* in the sense of Britt. & Rose is a mixed entity, the type-species of *Binghamia* is bound to be *B. acrantha*. Such a switch in types is logical on the part of a botanist who, like Werdermann, intends to maintain *Binghamia*, but is useless because *Binghamia* Britt. & Rose is untenable, anyhow, as a later homonym of *Binghamia* Agardh. Had the opponents of Backeberg realized that Backeberg intended to reject *Binghamia* primarily as a *nomen confusum*, much needless writing could have been avoided. It must be a matter of regret for any serious student of the Cactaceae that so keen and so competent an observer as Backeberg should all too often have ignored good taxonomic usage, ultimately throwing into confusion the very same issues which he could elucidate sooner and better than anyone else. A critical reader of Backeberg's work is bound to admit that Backeberg knows cacti throughout, and is often at a loss to understand why this sagacious collector and born naturalist should not have felt the need to study the rules of nomenclature and to conform with sound botanical usage.

In his discussion of *Pseudoespostoa* (Blätt. Kakt. 1934, Part 10—received at the Gray Herbarium, January 10th, 1936), a genus which is based upon *Cereus melanostele* Vaupel, Backeberg says: "The genus is usually confused with *Espostoa*, from which it is distinguished by the exterior areole-cephalium and the matted hairs, as well as the polished instead of dull seeds. The flowers open during the day. The fruit is smooth, scarred and pure white, sometimes with a pale pink flush. The plants branch from below and attain a height of 2 m at the most (in contradistinction to *Espostoa* . . .). A good differentiation between the genera is a desideratum for the future." Speaking of *Espostoa* (Blätt. Kakt. 1934, Part 8), Backeberg states further:

"The genus . . . forms specimens several meters high, branched above in contrast to the genus *Pseudoespostoa* (Central Peru) which remains low and is branched from below. *Espostoa* develops the cephalium from the central axis (as Humboldt has already observed), *Pseudoespostoa* has a lateral cephalium. In *Espostoa* the seeds are dull, the fruit reddish, in *Pseudoespostoa* the seeds are polished, the fruit white. In both the flowers are cup-shaped, whitish with a pink blush and open by day. *Espostoa* has silky hairs, in *Pseudoespostoa* they are felted. The two genera are usually confused in commerce, even Berger and Rose [*sic*] have not sufficiently appreciated the differences." Of *Binghamia* Britt. & Rose, Backeberg has the following to say (Blätt. Kakt., 1934, Part 10): ". . . Dr. Rose has constituted a special genus for South American Cerei, which 'develop on the side of the head capable of bearing flowers, a cephalium-like tuft.' He must have observed this on a *Cereus aurivillus* which he did not find in Peru and considered to be identical with his Peruvian *Cereus melanostele* (*Binghamia melanostele* Br. & R.—*Haageocereus pseudomelanostele* Bckbg.), which nevertheless had to do with Vaupel's *Cereus* but was new. The characteristic of the genus is good however, for *C. aurivillus* K. Sch. and *C. plagiostoma* Vpl. both develop such a bristly tuft, when they are old enough to flower and therefore constitute a narrowly delimited genus. This bristly tuft is not, however a cephalium, since only a few of the soft spines become longer and the oblique form of the flower tends toward the other allied genera which are typically South American: *Borzicactus*, *Cleistocactus*, *Denmoza*, *Matucana*, *Arequipa*, *Oreocereus*. . . *Borzicactus Humboldtii* (H.B.K.) Br. & R. is according to the description identical with *Cereus plagiostoma* Vpl. even to the locality . . .". *Borzicactus* is commented upon by Backeberg (Blätt. Kakt. 1935, Part 5) as follows: "The tube is not as a rule compressed, though occasionally it may be weakly so. The flowers are funnel-shaped like those of *Binghamia* and are blunter than those of *Arequipa* but closely resemble those of *Matucana* which, however, are bare. . . . The species of *Borzicactus* have rather weaker, lower stems (sometimes prostrate) and, like all *Loxanthocerei*, are dayflowers. The whole Section is transitional to *Trichocereus*, but these are night flowers. The connecting link is the pinkish white flower with a rather narrower opening than *Trichocereus* of *Trichocereus fascicularis*."

Backeberg recognizes the following genera

(in Backeberg & Knuth, Kaktus A-B-C, 1935):

(1)—*Borzicactus* Riccob., with *B. acanthurus*, *B. eriothricus*, *B. Faustianus*, *B. Fieldianus*, *B. jajoianus*, *B. Morleyanus*, *B. sepium*; (op. cit., 192-194).

(2)—*Binghamia* Britt. & Rose, with *B. Humboldtii* (*Cereus plagiostoma* Vaup.) and *B. icosagona* (*Borzicactus aurivillus* Britt. & Rose); (op. cit., 195-197).

(3)—*Haageocereus* Backbg., with *H. acranthus*, *H. chosicensis*, *H. decumbens*, *H. humifusus*, *H. laredensis*, *H. pacalaensis*, *H. platinospinus*, *H. pseudomelanostele*, and *H. versicolor*; (op. cit. 207-210).

(4)—*Pseudoespostoa* Backbg., with *P. melanostele* (op. cit., 340).

There is a strong probability that these four genera will be eventually reduced to two: *Borzicactus* (including *Binghamia*, sensu Backeberg, possibly as a new subgenus or section) and *Haageocereus* (including *Pseudoespostoa* in a subgeneric or sectional position, if *Pseudoespostoa* is not to go under *Espostoa*). Werdermann, as it has been seen, agrees (in Kakteenk., 50-51. 1937) with Backeberg in this, that Britton & Rose thoroughly misunderstood *Binghamia melanostele*, but holds to the opinion (in op. cit., 22) that *Binghamia*, as delimited by Backeberg, cannot be extricated from *Borzicactus*. Werdermann, finally, believes (in op. cit. 23) that the species treated as *Haageocereus* by Backeberg & Knuth in the Kaktus A-B-C are actually congeneric, but brings them all under *Binghamia*, not knowing that this name is an illegitimate later homonym.

The following new combination is still in order:

Haageocereus climaxanthus (Werd.) Croiz.

—Syn.: *Binghamia climaxantha* Werd. in Fedde Rept. 42: 4-6, 1937, and in Kakteenk., 51-54, figs. 1937.

All the references which I make here, or will make in the future to the Gray Index should be carefully qualified, to the effect that this Index (unlike the Index Kewensis) is published as loose cards, new ones being constantly printed to take care of new evidence in the taxonomic field or to suit changes in the Rules of International Nomenclature. Accordingly, I always refer to the Gray Index only as I find it during the preparation of my manuscript.

EDITOR'S NOTE

Our well known society member, Jack Whitehead, has been appointed manager of the University of California Botanical Garden. We are especially glad to make this announcement and we feel confident that the enthusiasm and ability of the new manager will result in an even better Botanical Garden. S. E. H.

The following 8 pages are the 5th and 6th installments of Werdermann's book "Brasilien und Seine Saulenkakteen"

A New Spine Character in Cactus

Echinocereus from Texas Shows "Woolly" Character in Juvenile Stage

By A. R. LEDING

Bureau of Plant Industry, U. S. Department of Agriculture

Reprinted from the Journal of Heredity, Aug., 1934

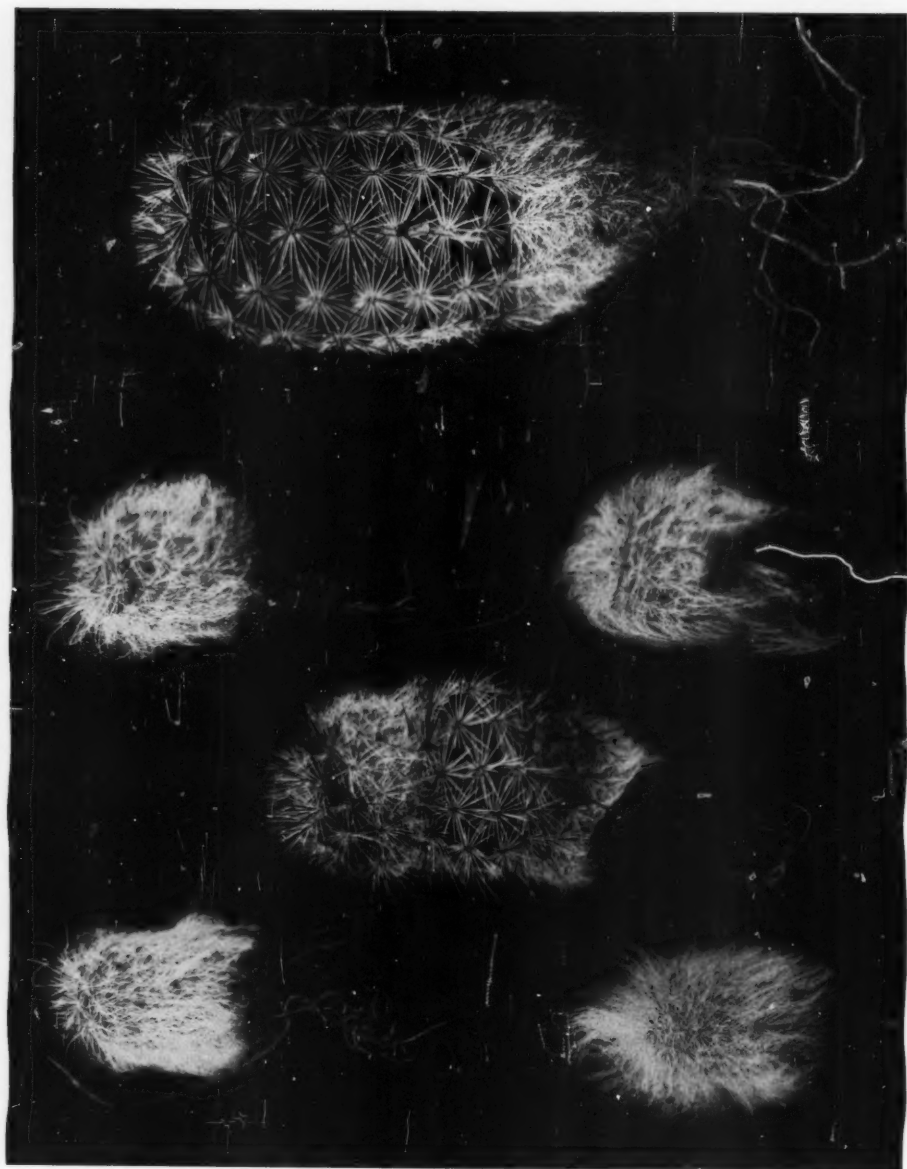
There is frequently a great deal of variation in plant characters among cacti. Some species have a wide geographic range and grow under very different conditions of climate and environment. Plants growing on a barren desert hillside where the only supply of moisture is an occasional shower will naturally differ in appearance from some of the same species whose home may be in the mountains in the shade of trees, where the soil is more fertile, the moisture more plentiful, and the temperature more moderate, but minor variations are also often found among individuals of the same species even when they are growing in the same locality.

Probably the least stable characters of the cactus family are those of the spines. It is often difficult, if not impossible, to identify species by their spines; the sometimes vague differences appearing to be bridged over by variations within each species. Under abnormal conditions of growth, changes in the characters of the spines and other parts are the rule rather than the exception. Joints of some of the *Platyopuntias*, when grown indoors, make a slender, cylindrical growth, entirely different in appearance from the parent stem, and in partial or dense shade in the woods the spines of some of the *Echinocerei* are usually finer and weaker than when the plants are growing in full sunlight. Young plants of some species of *Opuntia*, when growing in dense shade, may even have fine hairs instead of spines, but when these plants are moved out into the sunlight, normal spines soon begin to develop and the abnormal character disappears. In some species of the genera *Lophocereus* and *Cephalocereus*, changes in the spines occur with increasing age, but such changes take place in all the plants and are recognized as entirely normal. The discovery, however, of a new and strikingly different spine character in cactus plants which were growing under what may be considered completely normal conditions is sufficiently rare to be of interest. Such a variation may not be merely a response to environmental influences but may possibly be heritable.

Such a spine variation in *Echinocereus chloranthus* (Engelm.) Ruml. was found in Brewster

County, Texas, in the fall of 1932. These plants, instead of having the usual spine armament, were covered with fine, white hairs, which completely hid the body of the plant. Some plants, usually larger specimens, were also found on which both hairs and spines occurred. When this was the case, the hairs were located at the base of the plant, except in one specimen, which is shown in the center of Figure 12A, where a basal zone of hairs was succeeded by normal spines, above which occurred a second zone of hairs. While the hairy character appears to be associated with a juvenile stage of growth, since in most of the plants the hairs are succeeded by spines, some doubt is cast on this conjecture by the plant mentioned which bore a zone of hairs surmounting the spines. In most of the plants which bore both hairs and spines the transition took place at approximately the same position on the stem, but there was some variation in this regard. Most of the smaller sized plants, measuring from 3 to 4 centimeters in height, had no spines whatever, but a few of this size were found which were beginning to produce spines at their crowns, and one specimen, less than 3 centimeters tall, had well developed spines on the entire upper half of the stem. In some plants the transition from hairs to normal spines was gradual; the first radials above the zone of hairs being finer and more hair-like than those on the areoles higher up the stem. The plant at the center of Figure 12A also shows this character. In other cases the change was quite abrupt, as in the plant in Figure 12B, where the areoles immediately above the zone of hairs bear normal radial spines.

These plants varied in size from 23 to 40 millimeters in height and from 20 to 25 millimeters in diameter. The hairs measured from 8 to 15 millimeters in length. The hairs were quite fine and soft in texture and were densely set in the areoles, usually numbering about 40. They were more numerous than the spines. None of the plants which were collected has produced flowers, but there is little doubt that they belong to the species named. The series of plants appears definitely to connect the small, hairy ones with the specimens whose normal spines answer



A (Fig. 91)

WOOLLY HAired CACTI

Figure 12

B

Ordinarily this species of cactus (*Echinocereus chloranthus*) is equipped with a complete armament of robust spines, but some plants have fine white hairs instead of spines in the juvenile stage. These hairs are replaced with spines as the plants grow older, as is shown at B, where the plant has a hairy base and spines above. The plant in the center at the left has a band of spines and later has produced hairs again to be followed by spines at the tip. (One other plant showing a similar "pattern" was also found.) The plant above this at the right is beginning to produce spines at the tip. While spines are an extremely variable character in cactus, the fact that this hairy type was restricted to a definite region suggests that it probably has a hereditary basis.

to the description of *Echinocereus chloranthus*, as given by various authors.

The same locality in western Texas was visited again in the fall of 1933, and more plants of this type were found. Among them were several tiny specimens, a centimeter or less in height and diameter, which were completely covered with hairs. No plants as small as these had been seen the year before, and it is probable that they were seedlings of the current year's growth. The appearance of the general vegetation of the region indicated that the season had been much drier than usual, and for that reason it is likely that these plants had made less than normal growth.

These plants were not growing in shade or under other conditions which might be expected to produce abnormal growth, but were found on a rocky hillside in full sunlight. They were associated with two other species of *Echinocereus*, an *Escobaria*, a *Neomammillaria*, and other species of cacti, all of which were normal in appearance. The writer has collected *Echinocereus chloranthus* and the closely related *E. viridiflorus* Engelm. in many places in western Texas, New Mexico and Colorado, but has never before seen plants with this hairy character. The form of *E. viridiflorus* which grows in the mountains of northern New Mexico and southern Colorado is frequently to be found in partial or complete shade, under which conditions some change in the characters of the spines might be looked for, but such plants are nearly always quite normal in appearance, and so far as known, no specimens with the character here described have been reported. If then, the hairy character in the plants described is strictly associated with the juvenile stage of growth, it is rather remarkable that it has not been hitherto reported in this species, which has a wide range and is frequently collected. Altogether, these plants present an interesting problem as to the reasons for their abnormal character, if such it is. It seems certain that the hairy character is associated with the juvenile stage of growth, but it also appears possible that it is heritable in plants of *E. chloranthus* in the particular locality where they were found. Most of the plants which were collected are now growing in cultivation, and if they survive and produce seed, new plants can be grown in comparison with seedlings from plants with normal spines, and perhaps an answer secured to the question as to whether the hairy character is inherited or is merely a response to some unknown factor of the environment. Should the former prove to be the case, it is possible that these plants deserve specific rank in the genus *Echinocereus*, or at least varietal distinction. Decision in this regard, however, must await

further study of the plants, both in the wild state and in cultivation.

AUTHOR'S NOTE: Since the publication of the foregoing article the plants referred to have been growing in cultivation in the desert plant garden at the U. S. Cotton Field Station at State College, New Mexico. They have been now nearly nine years in place and have long since become quite normal looking specimens of *Echinocereus chloranthus*, bearing typical bronze green flowers. The present height of the plants photographed on April 7, 1942, varied from 16 to 20 cm. and their diameters from about 7 to 9 cm. It seems evident now that the original condition of hairiness was purely a juvenile one. For a few years after the plants had been in place vestiges of the hairs remained but these finally disappeared as have also some of the older spines close to the ground. The locality where the plants were originally collected has not been revisited so that it is not possible to say whether similar plants may still be found there. It is to be regretted, also, that it has not been practicable to grow plants from seed to discover whether the hairy spine character in the juvenile stage is inherited. It is hoped that this may be possible in a short time.

K.I.O. CACTUS CLUB

The following are the newly elected officers of the K.I.O. Cactus Club, for the 1942-43 term:

President, Mr. R. G. Zimmerman, R. R. 4, Beattytown, Springfield, Ohio.

Vice-President, Mr. Harold Ranshaw, 22 East 25th St., Covington, Ky.

Recording Secretary, Miss Margaret Diehl, 3943 Regent St., Cincinnati, Ohio.

Corresponding Secretary, Mrs. Daniel Neumann, Jr., 3401 Brotherton Road, Cincinnati, Ohio.

Treasurer, Miss E. M. Geer, 419 Probasco Rd., Cincinnati, Ohio.

\$80 WORTH OF BOOKS FOR \$48

1. *Journal*, Vol. 8, No. 4 to Vol. 14, No. 8; one or two more issues due. From fair to new. All insertions in place. 2. *The Cactaceae* B. & R., 4 volumes. The smaller size reprint. Fine. 3. *Cactaceae* Marshall & Bock. New. 4. *The Fantastic Clan* Thorner & Bonker. Cloth; fine. 5. *The Cactus Book* Houghton. Cloth; fair. 6. *Las Cactaceas de Mexico* Bravo. Paper; good. 7. *Book of Cacti* Lawson. Two, new, in original envelopes. 8. *Cacti for the Amateur* Haselton. Paper; good. 9. *Succulents for the Amateur*. Paper; fine. 10. *California Cactus* Baxter. Cloth; fine. 11. *Texas Cacti* Schulz & Runyon. Paper; good. 12. *Arizona Cacti* Univ. of Arizona Bulletin. 1933 edition. Paper; good. 13. *Arizona Cacti* Univ. of Arizona Bulletin. 1940 edition. Paper; fine.

BOX 101, PASADENA

CALIFORNIA CACTUS—E. M. Baxter. Describes all of the species of California with 85 illustrations. Compiled after 10 years of study. Common names, culture and locations. 8x11, 95 pages. Formerly \$2.50. Special Edition \$1.00.

BOX 101, PASADENA

to produce spines at the tip. While spines are an extremely variable character in cactus, the fact that this hairy type was restricted to a demimic region suggests that it probably has a hereditary basis.

FOUR INTERESTING SOUTH AFRICAN PLANTS

By M. W. MORGAN and JACK WHITEHEAD

***Monsonia multifida* E. Meyer. (Upper left)**

This is an interesting desert semi-succulent seldom met with in cultivation though occasionally found in rare plant collections as *Sarcocaulon multifidum*. It belongs to the Geranium Family, *Geraniaceae*, a family of plants that contributes some remarkable succulents which always fascinate the collector and often bewilder the uninitiated by their difference in appearance from Geraniums and Pelargoniums of gardens. Botanically, the genus *Geranium* has ten mostly free stamens while *Monsonia* has fifteen stamens with the filaments united into bundles of threes. The half succulent swollen stems are sprawlingly ascending to a height of from six to ten inches; they are anywhere from one and a half to two and a half inches wide at base and then taper gradually to a bluntish apex. The thin brownish black bark becomes papery and soon peels off to expose the clean, parchment-like inner bark. All along the stems, in a two-ranked arrangement, are stubby and rounded little shoots that burst forth for a brief season with from one to four erectish directed leaves, silvery blue-green, quite evidently stalked, well over an inch long, and with the blades nicely divided into narrow thickish segments, as indeed the specific name implies. As with all the other briefly seasonal parts of this odd plant, these leaves are silvery with soft white hairy pubescence. Geranium-like and fully an inch across when fully expanded are the pretty flowers, each of five roundly obovate petals, wavy-margined and short-clawed, bright pink, blotched at base and distinctly penciled with vivid crimson. These flowers are borne near the ends of the branches on short and slender petioles. A denizen of dry stony hills in Cape Province, South Africa, this plant as a wildling is almost entirely leafless the greater part of the year and it hardly changes in cultivation. There is, however, always a certain satisfaction to the plant lover in beholding this apparently dead bundle of dull brown swollen stalks all bumpy with the remains of fallen leaves.

***Haworthia truncata* Schönl. (Upper right)**

Here is one of the most charmingly odd of all dwarf succulent members of South African *Liliaceae*. It is one of the marvelous "windowed plants." The leaves are tightly squeezed together in a two-ranked fan-shaped arrangement, each leaf little more than an inch long, almost as broad and very thick, and abruptly cut off to form the minutely tuberculated and transparent "window." With the exception of the glass-like ends, the leaves are deep dark green. As in all *Haworthias* the flowers are neither interesting nor conspicuous. There are other *Haworthias* assuming the form of "windowed plants"—*H. retusa*, *H. tessellata*, and others—but few of them have the odd attraction of this pretty little succulent. It is interesting to remember that in nature these "windowed plants" grow in such fashion that only the tops or "windows" are exposed above the soil and that it is through these semi-transparent leaf ends that sunlight passes down to the active chlorophyll cells embedded in the green sides of the leaves underground.

***Echinothamnus pechuelii* Engl. (Lower left)**

Indigenous to Namaqualand and Hereroland is this rather more woody than succulent South African desert plant. Strangely enough it falls into the Passion Flower Family, *Passifloraceae*, where this monotypic genus has the distinction, among South African members at least, of being without the usual distinguishing tendrils of the family. Occasionally in collections it may be encountered labelled as an *Adenia*, a genus of South African plants not to be confused with another genus of plants from Africa and Madagascar bearing the somewhat similar name of *Adenium*. An inhabitant of dry and barren, rocky hillsides, the roots of this strange plant most tenaciously crowd cracks and crevices to support the immense swollen rock-like body. This plant body becomes so greatly enlarged as a solid, half woody, rounded bulkiness as to at times exceed a diameter of two feet. From the few short and stubby branches of this woody mass arise the several to numerous rather short branchlets, about as thick as lead pencils, tapered to long drawn-out spinous points, and grey-green in color. The leaves are few and small and of decidedly short duration. Male and female flowers are borne on different plants. Though everything about this plant suggests a struggling adaptation to desert conditions through the centuries it is a nice subject for the succulent plant collection with its striking contrast between the bulky rock-like storage body and the streamlined round slenderness of the branchlets.

***Pachypodium giganteum* Engl. (Lower right)**

Related to the garden Oleander, *Nerium oleander*, and the tropically famed Frangipani, *Plumiera acuminata*, of Mexico, *Pachypodium giganteum* is, with them, included in the Dogbane

Family, *Apocynaceae*. In general appearance, though not botanically akin, this rare plant strikingly resembles another robust spinescent succulent familiar to most plant enthusiasts hereabouts—the Cirio of Sonora and Baja California, Mexico, *Idria columnaris*. While occasionally branched, the trunks are usually simple, swollen at base and gradually tapered upwards, sometimes to a height of ten feet or more, and are conspicuously tuberculate and spiny. The slender branches, from three to six inches long and about half an inch thick, are sparingly borne at short intervals along the upper portion of the trunk. From knotty protuberances on the branches come the leaves, good-sized, somewhat broadly elliptical, undulate-margined, glaucous green and basally protected by from three to five spines. These leaves are usually simple though may infrequently show a tendency to form divisions; they are, as is common in a good many desert plants, very temporary affairs. This peculiarly interesting plant delights in the dry and arid, often boulder-strewn, hillsides of South African valley lands.

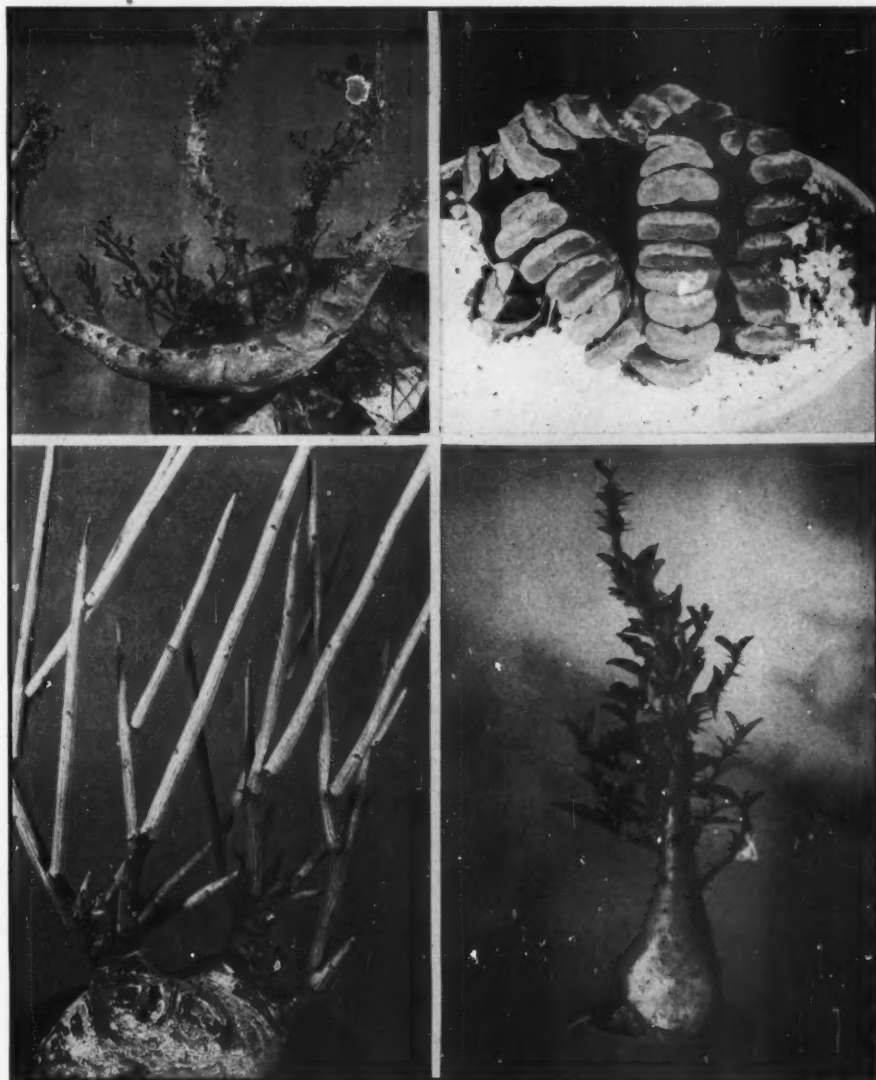
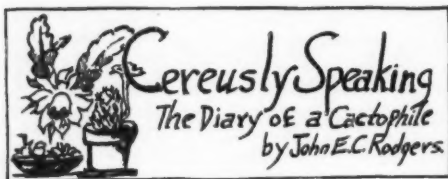


FIG. 92



PART X

October in Ohio

October 1. *Pelargonium echinatum*, which was dormant all summer, has leaves started. My plant is a cutting from Henry Poth's collection in Mansfield. *Hymenocylus croceus* var. *purpureus*, is a must for a collector; reddish-orange blossoms in abundance, good ground cover for a sunny bed, but not hardy. In 1937, I mentioned *Cephalocereus Palmeri* had three base shoots; Houghton conspectus lists it as a tree, so I decided "pot culture has changed its manner of growth."

October 4. A distracted cactophile phoned. Used cotton-seed meal around plants and now ground is mouldy. Told her to scrape off mould and a little of the top soil. Suggested using sterilized sand to smother mould. (The cotton-seed meal caused a slightly acid soil condition, as you would suppose, but a later check-up showed no ill effects on plants.) In 1939, I note that a student, knowing my penchant for curios, brought me a block of petrified wood from Zion National Park, Utah, for a paper weight. In 1940, Victor Hug, a fellow teacher, donated the petrified ball and socket joint of a locally found prehistoric animal. Could they think cacti are fossils?

October 7. October weather in Ohio makes me somewhat of a pessimist. When it is warm, I am lulled into security and then it is cold and I rush about to get plants out of the ground and put those under the grape arbor into the greenhouse. After I am in a dither, it gets warm again. Another *Epiphyllum guatemalense* bloomed. *Rhipsalis Houlettiana* and *E. Ackermannii* began to bloom for the second time this year. The December to March semi-dry period of the *Rhipsalis* and then the mid-summer dry times makes it forget seasons, I guess. Looking over my diary, it would seem we Rodgers are Nomads. We have changed our method of housing plants several times—in October. Twice we have even changed our address.

October 11. Good thing I got my greenhouse last year, I am sure my plants would not have fared as well as they do. I have priority materials from our board here or Lord and Burnham, either. (L. & B. are making plane parts, I understand.) It was this date in 1941 that I began the construction of my lean-to. I was learning the principals of "footer-construction" by practical application. In this district where freezing often reaches 28 inches, a six inch footer seemed inadequate. But L. & B. said "do it" and so "I do it."

October 13. Les Holt, the Lorain News Photographer (the paper Sandy writes for) was here and took pictures of the cactus beds, me included. Cameras seem to pick out the bad points in plants and humans, too. *Hamatocactus setispinus*, a five year old seedling, has its 13th bloom. In 1939, Sandy and I got up early and put all the plants that were outside on the garage floor. Two *Echinopsis tubiflora* in bloom. After school (it was Friday) we and the kids left for Sharon, Pa., to spend the week end with the John Bocks, collectors and good company. Not too dark after an 81 mile drive to look at the plants on the front porch. In 1935, we moved to 312 Alexander Ave. Tore down

my first 6x6 greenhouse and salvaged the hot bed sash for the new lean-to to be. We moved the plants in flats, placed carefully on the back seat of the old Essex. Sandy made no less than a dozen trips, but I wouldn't trust a mover.

October 16. In 1940, we had sold our home at 312 Alexander and had no home of our own to go to. Didn't know whether to build or buy. We rented a summer cottage until we could decide. Moved the cacti to the tomato house in Elyria. (You have heard of this before) I hadn't stopped collecting plants these five years, and those 12 car loads of plants of 1935 had grown plenty. We hired a trailer to move the plants. Sandy and I disagreed on the "fatherly care" with which I handled the vining cacti which I had strung up all over the cactus house. So I started to cut strings and toss my darlings out in the yard, hoping all the while Sandy would say, "John, dear, I didn't mean to make you hurry," but she didn't. And I gathered up the mess carelessly as though I didn't care, neither of us relenting. I threw them hodgepodge in a box. Neither Sandy nor I spoke. We drove to Elyria with my poor plants, de-potted and broken as they were. Talk about a four year old's temper tantrum. I had it. (Typist's note: It has taken him two whole years to admit it—GSR.)

October 19. At Mrs. John Schueller's the owner of a fine collection of xerophytes in her rockery. No frost as yet, but if threatening, she uses paper sacks to cover her tenderer plants. Mrs. Henry Mach asked me if I wanted her five foot *Opuntia brazilensis*. Did I say no? In 1940, we had our first snow fall of the year. Melted quickly, however. Temperature, 31 degrees. *Zygocactus truncatus* and *Rhipsalis boulettiana* bloomed today.

October 21. *Sedum Sieboldii*, one of the hardy rockery plants, in bloom. Native to Japan, but not an enemy alien in my collection. *Kleinia pendula* bud showing scarlet through the reddish green outer perianth segments. *Tacingia funalis*, which refused to grow in regular "cactus soil" which I mix, has responded so very well in a chopped sphagnum and sand soil mixture that I now have two six-inch plants. *Greenovia aurea* (bought it as *gracilis*) is another that is responding to this desperate "kill or cure" treatment. Languished in the adobe type soil; same in loam type; ditto in the sand and loam mixture; but in my sand box, where it is always moist, it has doubled in size. I wish I had more nerve to experiment with some of those "hopeless" cacti which I humor because I don't know what to do.

October 25. A large V of geese reminded me that winter can be expected any day. Two tons of hard coal in the greenhouse bin. The little brooder stove, all set and sporting a few feet more pipe leading to a regular chimney which I hope, HOPE, will do away with the fly-ash that wrecked my sweet disposition last year. *Schlumbergera Russelliana* buds have started on my plant, that according to its former owner, is now 35 years old; has a 3-foot spread. Looked at my plants today and procrastinated . . . lulled again by Indian summer weather and my wishful thinking that there will be more warm weather. Protected my plants last year from frost with muslin tents each night, watching the thermometer for any indication of a freezing cold. Dreaded the mad rush we would have to get the plants into some protected spot until the greenhouse would be finished.

October 27. *Cephalocereus "nobilis" cristate* which I bought two years ago, has two normal shoots which in no way answers the B. & R. description of *nobilis*. These offsets are five sided, light green columnar plants with short spines. *Peperomia clausifolia* growing two new off-shoots; is much prettier and sturdier than

floridiana. In 1938, I mentioned that on this date we had 1,022 degrees excess of temperature with a deficiency of 2 inches of rainfall.

October 29. My large disfigured *Euphorbia lactea* reminds me that basement storage is not for the Euphorbiae. Euphorbiae cannot stand semi-darkness and being too dry. I now have them on a shelf in the greenhouse in full light and semi-dry. Last year, radio predicted freeze in this region. Grabbed flashlights—sent madly for new batteries. MAD RUSH—but got plants all in chicken house by mid-night, and then to bed, exhausted, half of me still rushing in my dreams.

Jottings for October 31

1934. Selected a loan exhibit of South American cacti for a science teacher. Was able to supply one for most countries according to check made with Houghton's conspectus.

1935. Still bemoaning my inability to arrange the cactus house because of outside work.

1936. Planted a fine cutting of *Cereus triangularis* from the Florida Exhibit of the Great Lakes Exposi-

tion, Mr. Barnes, manager of the exhibit, gave it to me. Also bought a board of orchids from him. They are still growing and blooming in my greenhouse.

1937. Writing bug got hold of me and wrote letters to several cactophiles. Used putty gun loaded with plastic to seal some leaks in greenhouse roof.

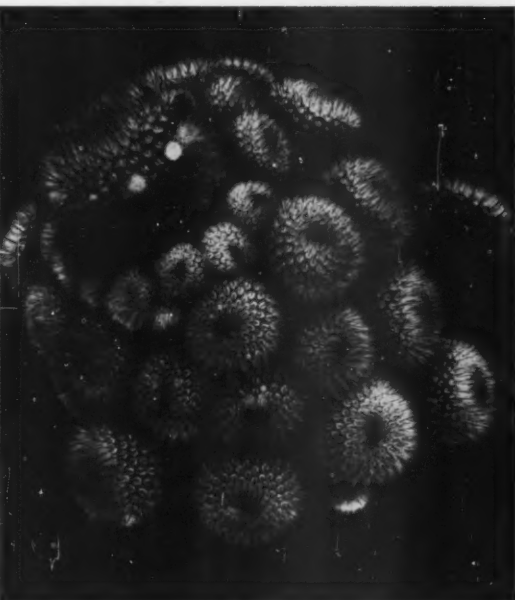
1938. *Zygocactus truncatus* in bloom. Got a letter from Eugene Ziegler. Extols the Orchidaceae. Hope silence about cacti doesn't mean he is losing interest.

1939. *Phiddipus formosus* (Peckams) the jumping spider, back for greenhouse season. Seems quite contented to spend his winters in my tropical house.

1940. *Mammillaria perbella* grafts, both normal and cristate on a two-headed *Nyctocereus serpentinus* stalk, went bad. Plan to regraft small pieces of each on my old stand-by—*Cereus peruvianus*.

1941. Last of my greenhouse material came today. What a relief to see it tallies with my bill of lading.

1942. Up to October 1, 60 different species of cacti, 84 plants, have bloomed for me in my collection. I also have had 110 other succulents bloom. (Species other than cacti not recorded.)



Ye Editor gives Ed Guegan one of Mr. Allen's *Notocactus scopae* var. *ruberrima*. Note the philanthropic smile which only becomes a cactophile! The cluster shown at the left is an 18 months' growth of a 1½ inch plant from Hummel grafted on a stocky *Cereus*. On the right is the same plant a year later which had more than fifty offsets. The original plants seemed to elongate and enlarge each year as a yearly crop of pups are produced from the base of the graft and another to form a crown just below the growing center. The plant flowered each summer but did not set seed. The offsets are now in the collections of 30 experimenters who will soon report to Bulletin readers.

CACTACEAE

By Marshall and Bock

We have just completed the first copy of the CACTACEAE with all of the 25 Plates hand colored. The artist, Agnes Marshall, worked directly with the live material from the senior author's garden and the colors are therefore very accurate. Price \$50.00.

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EXPERIMENTERS PLEASE NOTE

Please send in your fall report telling how you potted your experimental plants and the results. We would like to publish this report in the December issue, therefore reports should be received by Nov. 20.

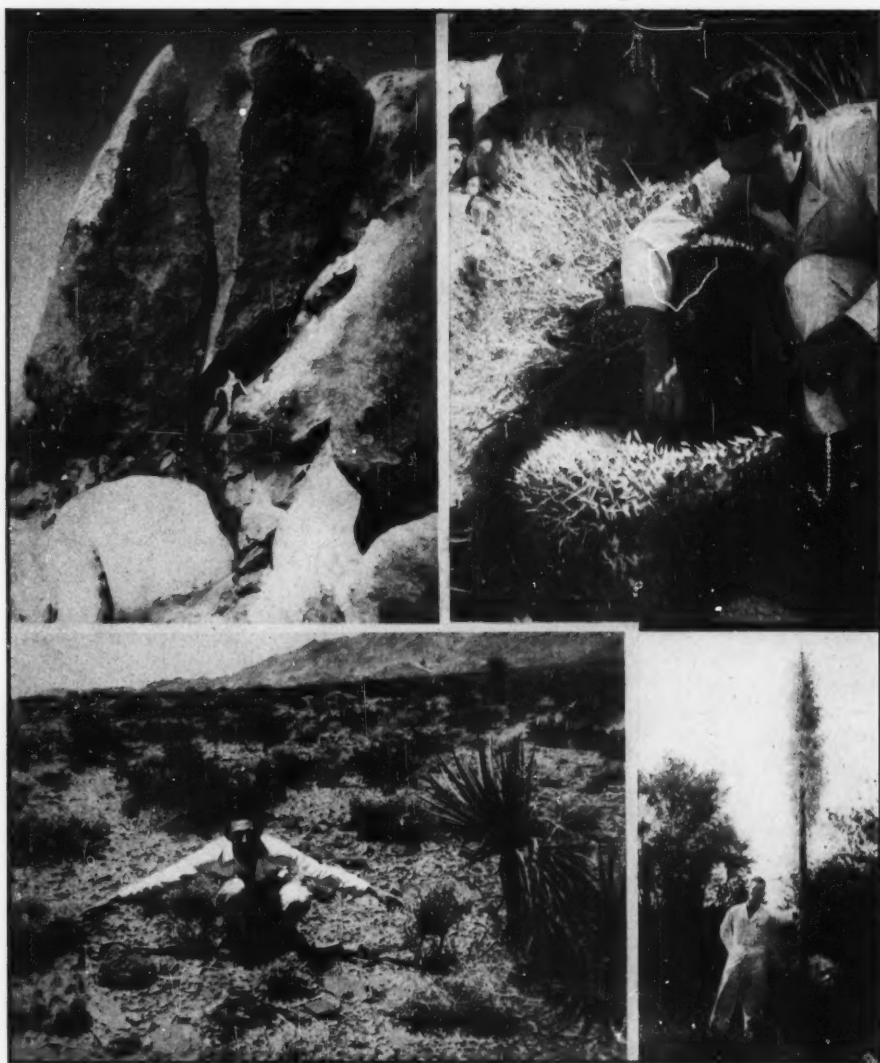


FIG. 94. *Top left*: "The desert is not all sand," so says Ed Guegan as he balances a split rock near Dead Man's Point. *Top right*: A reclining *Echinocactus polycephalus* four feet long hiding under sage brush. *Bottom left*: Five species of cacti and two lilies within arm's reach. *Bottom right*: The author stands beside an 18-foot yucca.

A Trip to Ord Mountain

It was with extreme pleasure that I accepted the invitation extended to me by Scott Haselton to visit some of the wonders of California's deserts. As this was spring, nature would be at her loveliest. The invitation was doubly appreciated since few of the nature lovers were making their annual trek to see the deserts in bloom

due to the tire rationing situation.

After having spent a nervously expectant night, I arose at 3:30 a. m. and met Scott, who had a delightful surprise. We were to be accompanied by J. R. Brown, who needs no introduction to readers of the JOURNAL.

Scott had chosen as our destination, the Ord

Mountain district, at a distance of about one hundred and fifty miles northeast of Los Angeles. This is the home of *Opuntia erinacea* the Grizzly Bear Cactus.

The morning was ideal. Cool and refreshing breezes played through our hair and faces. To our left rose the Sierra Madre range of mountains, their tops shrouded in great banks of fog. As the sun rose, its rays penetrated through in places, forming red halos above the valleys high upon the mountain sides. Every now and then the rays shone through like the illuminated spokes of some gigantic wagon-wheel, while below, the blue and purple haze gave the mountains the appearance of huge bubbles ready to rise into the air at any moment. At last being able to hold the sun no longer, the fog banks seemed to burst instantaneously, causing the mountains to stand out in bold relief and bathing the surrounding country in sunlight. It was morning!

Our eyes dropped now to the level land around us. Spring rains had given a luscious color to the vegetation and the ground was carpeted with green grass. Great groves of orange trees, their golden ripe fruit and snow-white blossoms contrasting with the deep black-green foliage, stood among the uncultivated areas of chaparral. The air was permeated with perfume. (To J. R. this was strongly suggestive of ham and eggs, since he had gone off without his breakfast.)

Sprawling among the chaparral were thousands of plants of *Opuntia Vaseyi* in full bloom, the three-inch flowers ranging from yellow and orange to pink. In the distance we could see what appeared to be thousands of huge white candles, but as we came closer we found they were the flowering stalks of *Yucca Whipplei*, and we knew the origin of the common name "Lord's Candle." Each stalk stood erect, from ten to fifteen feet high, and each bore several thousand flowers, similar in texture to the waxy orange blossoms.

As we neared the foot of the mountains, *Opuntia Parryi* appeared; its cylindric branches arching ten feet and more long. It was just coming into bud.

We crossed the Sierras over El Cajon Pass. (J. R. was disappointed that we didn't stop at the Cafe on the way up.) *Yucca Whipplei* extended half way up the pass where it stopped abruptly. From the summit we looked down upon an entirely different scene—gone was every vestige of rainfall. Although colorful enough, gray, red, brown and yellow predominated. No green grass was visible. The sun's rays beat down relentlessly and shimmered on the dry sand and rocks. The heat was intense

even though the morning was still young.

When we reached Victorville we stopped for breakfast. J. R., who had by now become quite inert, made a leap for a Cafe and as Scott and I entered he was gasping, "Hot cakes."

Refreshed, we resumed our journey, which now took us through miles of Joshua trees (*Cleistoyucca arborescens*). The landscape here could be used as an illustration for Milton's "Paradise Lost," so grotesque were the forms assumed by these trees. Some were single stems fifteen or more feet high, bent and knotted, each with a pom-pom of stiff sword-like leaves at the top, while others were much branched, thirty-five feet high, with the branches usually on the south and west sides of the trees, giving them a weird, decidedly lop-sided appearance. It was from this characteristic that the species gets its common name, allegedly bestowed upon it by the Mormons, who believed it to be the tree the Lord used for Joshua to point the way out of the wilderness. This tree is the largest representative of the Lily family.

About forty miles from Victorville we made a stop at the bottom of a very rocky hill and started up to explore. At the foot, *Opuntia ramosissima* and *O. acanthocarpa* were plentiful. These species were not large plants but bore the same effective covering of sheathed spines. The latter was a beautiful plant with its numerous silver spines.

As we climbed higher, *Echinocereus Engelmannii* was growing clustered among the rocks, its long spines brightly colored. This species was in flower with the three-inch purplish blooms.

Almost simultaneously with the above species appeared *Echinocactus polycephalus*, the "Nigger Head," which was in fruit. Were it not for the thick cream-colored wool covering the fruit, we would have mistaken this cactus for *Ferocactus acanthodes*, since the plants here were single specimens and much elongated. One was lying prostrate on the ground and measured four feet long (see photo).

I noticed a large rock near the top of the hill, which had split squarely in two. I walked under and attempted to push it together again since it looked like a simple matter.

Forty miles farther we were at the base of Ord Mountain. We drove around to find a road leading up to it. Scott saw a desert tortoise and after a few minutes spent in getting acquainted, he put him in the car.

From the road, a gradual slope ran up to the base of the mountain about two miles away. The soil here was very coarse decomposed granite strewn with large rocks. Sage brush and other desert shrubs grew in a definite spaced

pattern as if each had been deliberately so planted—and everywhere there were cacti. Here indeed was my paradise.

The genus *Opuntia* was represented by three species: *O. ramosissima*, which grew in the form of an upright bush with a main trunk, its small spiny fruit on the end of the powder blue branches had just matured; a crested branch was found by Scott. The tree-like shrub of *O. acanthocarpa* stood four feet tall and its many thick branches, completely covered with silver sheathed spines, glistened in the brilliant desert sunlight. The Beaver Tail, *Opuntia basilaris* was abundant and was in full bloom; the three-inch scarlet-purple flowers were so vivid they threw off a glow about them that fairly hurt your eyes.

Here *Echinocactus polycephalus* was typical, the almost spherical heads about eight inches through were found as single plants, or more often as mounds composed of a few enormous clusters of fifty heads. The felt-covered fruits were thickly imbedded in white wool in the crown of each head. The pink and white color of the heavy curved spines contrasted with the green of the plant body.

The hedgehog, *Echinocereus Engelmannii*, was represented by thousands of plants. Each varied as to spine coloration. All sizes from one to thirty heads were found. This species was in bloom and its four-inch waxy deep purplish flowers were conspicuous a long way off.

Seemingly too delicate to survive the desert conditions, *Coryphantha deserti* was nevertheless much in evidence. The tiny, two inch lacy, white-spined, single stemmed plants were usually wedged between rocks.

As we walked toward the mountain, the cacti became more abundant, with each plant having a personality of its own. At one place four clumps of *Echinocereus Engelmannii* were growing side by side, as if they had lined up for comparison of the various spine-coloring. Each cluster was uniform throughout, but one cluster differed from another. The long spines of one were ashy-grey; of the second, red; of the third, black at the base, yellow, grey to red at the tips; while the fourth had all its white spines tortuously twisted.

J. R.'s strength was again ebbing, so we returned to the car and drove to the other side of the mountain where we were to see *Opuntia erinacea*. As no road was found leading up to the mountain, we decided to park and walk. We picked a nice shady spot under a Joshua tree in which to eat. We ate heartily of the delicious meal prepared by Scott. We had almost finished when an Army Jeep passed us manned by four Negro soldiers, one of whom was smoking, and not five minutes later we were startled

to see a fire raging about two hundred yards from us. Evidently the soldier who was smoking had carelessly tossed aside a lighted match which caught hold immediately. Taking picks and shovels, that Scott had brought along, we attempted to curb it, but the headway it made in the dry tinder was utterly beyond our control. Notwithstanding the seriousness of the situation we had to smile at J. R. beating the fire frantically with a stick and his hasty retreat each time the spreading flames would encircle him. Finally we hurried to the car and drove to the nearest telephone about thirty miles away, where Scott reported it, only to get this reply from the alert Victorville police, "Wal, if it gets too bad we may go out and fight it." As we drove through Victorville we saw this same public servant sitting with his feet on the porch rail while our deserts burned.

Too late to go back, we decided to return to Los Angeles. Looking back we could see the great billowing clouds of black smoke rising over the mountains in the far distance and we wondered if the Grizzly Bear had become the bare Grizzly.

In conclusion, I would like to say that I didn't succeed in my attempt to push that boulder together again.

EDWIN P. GUEGAN.
Kansas City, Mo.

AN ODDITY IN BOTANICAL NOMENCLATURE

Dr. L. Croizat has recently pointed out to us an error in nomenclature in our book on the Stapelieae. As it involves a curious point, we are taking the occasion of our publication of the corrected name to discuss the matter in a little detail.

The point in question involves the synonymy of a new combination we published on page 754 of volume ii, which reads:

Duvalia polita var. *transvaalensis* (Schlechter), comb. nov.

Duvalia transvaalensis Schlechter, 1895.

Duvalia transvaalensis var. *parviflora* Bolus, 1915.

There is a rule of botanical nomenclature (Art. 55 of the International Rules, 1935), which reads in part: "When a variety . . . of a species is transferred, without change of rank, to another . . . species, the original (varietal) epithet must be retained. . . . The existence of an earlier synonym of different rank . . . does not effect the nomenclature of the variety. . . . It is the earliest varietal epithet which is retained."

Here is a very definite statement, which allows of no exceptions, and consequently, in making the transfer of Schlechter's group, *Duvalia transvaalensis*, which included also in our opinion a

small-flowered form proposed as a distinct variety in 1915 by Dr. Louisa Bolus, *Duvalia transvaalensis* var. *parviflora*, to *Duvalia polita*, we were incorrect in giving our new combination the name *Duvalia polita* var. *transvaalensis*. We should instead have given the new combination the name, which we now propose: *Duvalia polita* var. *parviflora*, comb. nov.*

So far the matter seems clear. We have effected the transfer of Schlechter's group (embracing the smaller-flowered form) from *Duvalia transvaalensis* to *Duvalia polita*, following the rules in the only way they can be interpreted. And yet a distinct oddity has resulted. We have lost all trace of the specific name, *D. transvaalensis*, originally given by Schlechter to the entire specific group, as he saw it, and have substituted the varietal name, originally given by Dr. Bolus to the partial group, which included only (as we explained on page 756 of our book) the smaller-flowered members of the specific group as a whole, those with flowers having corolla-lobes of 0.8 cm. instead of 1.1 cm. in length. Our new combination, *Duvalia polita* var. *parviflora*, includes all specimens alike of this group, the large-flowered ones, originally recognized by Schlechter, and the small-flowered ones, later recognized by Dr. Bolus. All are the same botanically, as gradations of size in such groups of Stapeliads are not infrequent. Yet, so far as the name of the new combination goes, according to the Rules, it is the earliest varietal name which alone endures! The small-flowered varietal group has therefore now engulfed into itself all the larger flowers, so that the new name suggests that the variety, *D. polita* var. *parviflora*, has smaller flowers than the typical form, *D. polita*, although, considering the largest specimens included in the variety, it is possible that the reverse is the case. The tail, one might say, is wagging the dog.

Such is one of the odd pranks which the International Rules occasionally play upon us all. Yet we must not forget that any law is apt to beget some whimsical consequences. The important thing is that a body of law exists, so that uniformity in handling the nomenclature of plants is possible, and one must aim at a correct observance of these laws, to the best of one's ability. We owe our thanks to Dr. Croizat for pointing out this particular whimsy.

ALAIN WHITE. BOYD L. SLOANE.

**Duvalia polita* var. *parviflora* (Bolus) White & Sloane, descr. ampl. Syn.: *D. transvaalensis* Schlechter, in Engler: Bot. Jahrb., 20, Beibl.: 51. 1895; *D. transvaalensis* var. *parviflora* Bolus, in Ann. Bolus Herb., i. 194. 1915; *D. polita* var. *transvaalensis* White et Sloane, Stapeliaceae, ii. 754. 1937.

A planta typica praecipue differt corollae lobis haud ciliatis, perspicue maculatis, marginibus haud reflexis.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912. Of Cactus and Succulent Journal, published monthly at Pasadena, for October, 1942, State of California, County of Los Angeles.

Before me, a notary in and for the State and county aforesaid, personally appeared Scott E. Haselton, who, having been duly sworn according to law, deposes and says that he is the Editor-Publisher of the CACTUS AND SUCCULENT JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Scott E. Haselton, Box 101, Pasadena.

2. That the owner is: CACTUS AND SUCCULENT SOCIETY OF AMERICA, INC., and leased to SCOTT E. HASELTON, who created and published said magazine to date.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None. Cactus and Succulent Society is a nonprofit organization and issues no stock.

SCOTT E. HASELTON.

Sworn to and subscribed before me this 1st day of October, 1942. MARGUERITE FULLER, Notary.

BALLOT

For Officers and Board for 1943 of the CACTUS & SUCCULENT SOCIETY OF AMERICA, INC.

(As provided in Article VII, Sec. 2 of the By-Laws of the SOCIETY, all nominations together with a blank space for write-in for each office shall be mailed to each member. The ballot must be returned to the Secretary, Clarence Clum, 510 Union Bank Bldg., Los Angeles, before midnight, Dec. 15, 1942. If ballot is returned, mark an X after the nominee or write in the name of your nominee in the space provided therefor and mark an X after the name so written.) A signed post card marked "I vote for the officers as nominated" will constitute a ballot.

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